

CHEMICAL WEEDING OF VEGETABLE CROPS - 1959

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The following information and suggested weed control practices have been prepared for use by Ohio vegetable growers during the 1959 season. Several new herbicides have been added to the list based on research results of the past several seasons.

Some general precautions:

1. Study your weed problems and determine if and where chemicals might be necessary in your weed control program.
2. Before using any herbicide - READ THE LABEL -. Safe and lawful use of a particular chemical is clearly stated on the label.
3. All suggested "rates per acre" included in this report are based on the active ingredient. For instance, if a product is marked as a fifty percent material and you wanted to use two pounds per acre of active ingredient, you would use four pounds of the fifty percent commercial product. Or in the case of a liquid, most of these products are labeled as containing two, three, or four pounds of active material per gallon, you would merely figure the liquid measure which would supply the number of pounds of active material wanted per acre.
4. All suggested "rates per acre" included herein are based on spraying the entire acre, 43,560 square feet. If you plan a band application rate per acre would be reduced in proportion to the actual area sprayed.
5. Proper application of herbicide sprays usually involves such items as nozzle size, nozzle height on boom, pressure at the boom, and the speed of the tractor. Check specific manufacturer's recommendations and follow them carefully.
6. The need for spray tank agitation and volume of water to use per acre vary with the different chemicals and formulations. Be sure to read the label suggestions for most efficient application.
7. When using 2,4-D, be sure that the spray is applied in such a way as to avoid damage to adjacent susceptible crops, whether on your farm or adjacent farms.
8. Clean spray tank and boom after each use of herbicide sprayer. Use a separate sprayer for 2,4-D since it is very difficult to remove all traces of this chemical from a sprayer.
9. Use herbicides in a limited way until your experience warrants a larger scale use.

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COMMON AND/OR TRADE NAMES OF CHEMICALS SUGGESTED FOR USE IN WEED CONTROL
IN VEGETABLE CROPS IN OHIO FOR THE 1959 SEASON, WITH SOME GENERAL INFOR-
MATION ON USE*

Chemical	Type**	Vegetable Crops	Pre- mergence crop	Post- mergence crop	Remarks Weed Control
Alanap (NPA)	1	cucumber muskmelon pumpkin squash	X X X X	- - - -	Annual weeds
Chloro IPC	1	lettuce onion spinach	X X X	- X -	Annual weeds except lambs- quarters
Crag Herbicide 1 (sesone)	1	asparagus potato sweet corn	X X X	- - -	Annual weeds
Dowpon (dalapon)	2	asparagus potato	X	-	Annual and perennial grasses
Dow Premerge or Sinox PE (dinitro, amine)	2 or 1	asparagus lima bean, snapbean potato, sweetcorn	X X X	- - -	Annual weeds
Karmex W (monuron)	1	asparagus	X	-	Annual weeds
Karmex DW (diuron)	1	potato	X	-	
Karmex N (neburon)	1	tomato	-	X	
Simazine	1	sweet corn	X	-	Annual weeds
Sodium TCA	2 or 1	beet, broccoli cabbage, cauliflower	X	-	Annual grasses
Stoddard Solvent	3	beet, onion carrot, dill celery seedling parsley, parsnip spinach	X X X X X	- X X X -	Annual weeds except ragweed
Randox (CDA)	1	lima bean onion potato snapbean, sweetcorn	X X X X	- X - -	Annual grasses
2,4-D (LV ester)	2 or 1	asparagus potato sweet corn	X X X	- - -	Annual and perennial broadleaf weeds
2,4-D (amine)	2 or 1	sweet corn	-	X	
Vegadex (CDEC)	1	eighteen recommended crops	X	-	Annual weeds

*Read the label, on the container, and be sure that the proposed use has been approved.

- ** (1) Spray must be applied on soil surface before weeds have emerged.
 (2) Spray should be applied on small weed seedlings and residue of spray on soil will provide some control of later emerging weeds.
 (3) Spray must be applied on small seedlings (weed) and the chemical has no residual effect on later emerging seedlings.

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Table 2. Suggested Chemical Weed Control Practices with Vegetable Crops. Ohio. 1959

Crops	Herbicides	Time of Application	Rate per acre	Remarks
Asparagus	monuron (Karmex W)	Before or after cutting season	1 lb. on light soils, 2 lbs. on heavy soils or muck.	Essential to have good agitation in spray tank. Good annual weed control
	2,4-D (LV ester)	Before or after cutting season	$\frac{1}{2}$ lb. on light soils 1 lb. on heavy soils or muck.	Good control of broadleaf annual and perennial weeds. Use before shoots appear.
	Sesone (Crag herbicide 1)	Right after spring or summer discing	4 lbs. on light soils to 6.0 lbs. on heavy soils or muck.	Soil must be moist with no weeds emerged at time of spraying.
	NPA (Alanap)	Right after spring or summer discing	4 lbs. on light soils to 8 lbs. on heavy soils or muck.	Soil must be moist with no weeds emerged at time of spraying.
	Dinitro (amine)	Before shoots appear after spring or summer discing	6 lbs. on most soil types.	Application should be delayed until after some weed emergence but prior to shoot emergence.
	Dowpon (dalapon)	Same as above	5 lbs. on most soil types.	Excellent for control of emerged annual grass and also to retard quack-grass.

Asparagus (seedlings)	Dinitro (amine)	One or two days before emergence of seedlings	3 lbs. on most soil types.	Annual weed control.
	Stoddard solvent	One or two days before emergence of seedlings	60 gallons (undiluted)	Annual weed control.

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Table 2 (continued)

Crop	Herbicide	Time of Application	Rate per acre	Remarks
Bean, snap and lima	Dinitro (amine)	Just prior to bean emergence	3 lbs. on light soils to 6 lbs. on heavy soils.	Snap beans somewhat more sensitive to dinitro than lima beans.
- - - - -	CDAA (Randox)	Prior to bean emergence	4 lbs. to 6 lbs.	Good annual grass control.
Beet	Stoddard solvent	Just prior to beet emergence.	60 gallons undiluted.	Weeds must have emerged at time of spraying.
- - - - -	Sodium TCA	Prior to beet emergence.	6 lbs.	Annual grass control.
Broccoli Cabbage Cauliflower	Sodium TCA	Prior to crop emergence.	4 to 6 lbs.	Annual weed control, except ragweed.
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Carrot Dill Parsnip Parsley	Stoddard solvent	Prior to crop emergence, or at 2- to 4-leaf stage.	40 to 80 gallons, undiluted. Use high rate with larger or denser weed growth.	Annual weed control, except ragweed.
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Celery (seedlings)	Stoddard solvent	Young seedlings, 2-leaf stage	60 gallons, undiluted.	Annual weed control.
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Lettuce	Chloro IPC	Just prior to emergence of lettuce.	3 lbs.	Use on muck soils only.
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Table 2 (continued)

Crop	Herbicide	Time of Application	Rate per acre	Remarks
Onion	Chloro IPC	Just prior to emergence of onions	6 lbs.	Use on muck soils only.
	Stoddard solvent	Just prior to emergence of onions	60 gallons (undiluted)	Weeds must be up at time of spraying.
	Chloro IPC	Apply as a directed spray after onions have emerged. Spray can be applied two to three times during season, but last spray must precede harvest by at least 30 days	3 lbs. to 4 lbs.	Onions should be cultivated and hand-weeded just prior to application of Chloro IPC. Best results have been obtained where the chemical has been applied in 100 gallons of water per acre.
Potato			3 lbs.	
	Dinitro (Amine)	Just prior to emergence of potatoes.	to 6 lbs.	Soil should not be disturbed after treatment, until new flush of weed seedlings are noted.
	2,4-D (LV ester)	Just prior to emergence of potatoes	½ lb. to 1 lb.	The low rate should be used on light sandy soils and the heavier rate on mucks, silt loams to clay loams. The rate of 2,4-D should be cut in half for late May or June plantings when high temperatures prevail.
	Karmex DW (diuron)	Just prior to emergence of potatoes	1 lb.	Good control of most annual weeds. Use on trial basis on small acreage.
	Crag Herbicide (Sesone)	Prior to emergence of potatoes	4 lbs.	Must be applied before weeds emerge. Use on trial basis, small acreage.

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Table 2 (continued)

Crop	Herbicides	Time of application	Rate per acre	Remarks
Spinach	Stoddard solvent	Prior to emergence of of spinach.	60 gallons	Weeds must be up at time of spraying.
	Chloro IPC	Same as above.	2 lbs.	Should be applied before or at time of weed emergence.
Sweet corn	2,4-D (LV ester)	Prior to emergence of sweet corn.	$\frac{1}{2}$ lb. to 1 lb.	Some damage possible on light sandy to gravelly soils if heavy rain follows treatment.
	Dinitro (amine)	same as above	3 lbs. to 6 lbs.	same as above
	CDAA (Randox)	same as above	4 lbs.	Good annual grass control.
	2,4-D (amine)	Apply at emergence or up until corn is four inches high.	$\frac{1}{2}$ lb.	Apply with corn 3 to 6 inches high with small weeds and moist surface soil.
		Or apply as a directed spray using drop pipes with nozzles, so as to avoid spraying corn foliage after corn is more than 4 to 6 inches high.	$\frac{1}{4}$ lb. to $\frac{1}{2}$ lb.	Some hazard if corn has been exposed to high temperatures for several days prior to spraying. Use drop nozzles; direct spray on weeds and soil; avoid spraying corn as much as possible. Avoid spraying when temperatures have been in high 80's and 90's.
Squash Cucumber Melons Pumpkin	NPA (Alanap)	Apply one or two days after planting the crops.	4 lbs. to 6 lbs.	The low rate of NPA should be used with squash and pumpkin. Some varieties of summer squash are injured by NPA.

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New Chemicals:

Eptam - Stauffer Chemical Company. This chemical is being suggested as a pre-plant treatment for such crops as snap beans, sweet corn, and potatoes. It is also suggested as a post-emergence treatment with established tomato, potato, and sweet corn plantings. For most effective weed control with this chemical, it is essential to (1) eliminate all emerged weeds by disking or cultivation, (2) apply the herbicide over the soil surface, and (3) incorporate the chemical into the soil by means of cross-disking or use of rotary tillers on non-planted land and by cultivation on established plantings. Research results with this material in 1958 were very satisfactory. The above suggested uses warrant at least limited trial during the 1959 season. Excellent control of nut-grass (*Cyperus esculentum*) has been achieved with Eptam.

Amine Triazole. - This chemical has a minimum value for general weed control in vegetable crop plantings due to the low tolerance of most vegetable crops. However, spot control of Canada thistle, poison ivy, and many other difficult-to-control perennial weeds can be accomplished through use of five to six pounds of this material in one-hundred gallons of water. Quackgrass control ahead of sweet corn and potato plantings has also proven worth while.

Some Special Weed Control Measures:

Quackgrass (*Agropyron repens*) can be controlled on non-crop land with: Sodium TCA at 30 to 40 pounds per acre; Dalapon at 10 to 20 pounds per acre; Amino triazole at 5 to 7½ pounds per acre; or Maleic hydrazide at 15 to 20 pounds per acre. All of these treatments should be applied with about 100 gallons of water per acre on vigorously-growing quackgrass in early spring or early fall. Approximately ten days to two weeks after treatment the area should be spaded or plowed under. Dalapon treatments at the rate of 10 pounds per acre applied in early spring on four to six-inch growth of quackgrass, followed by plowing two weeks later, has tended to minimize trouble with this weed on sweet corn and white-skin potato variety plantings.

Canada thistle (*Cirsium arvense*) has been controlled or eradicated with 2,4-D and/or 2,4,5-T in recent years. However, at the present time it would appear that 5-pound per acre rates of amino triazole might well supplant these previously-used treatments.

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